

Document Control No. 4400-75-AHDC

Revision 1

**FIVE-YEAR REVIEW
FINAL REPORT**

**POWERSVILLE LANDFILL SITE
POWERSVILLE, PEACH COUNTY, GEORGIA**

Work Assignment No. 75-4FEB9

DECEMBER 1997

REGION IV

U.S. EPA CONTRACT NO. 68-W9-0057

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WESTON W.O. No. 04400-075-096-0005-00

FIVE-YEAR REVIEW
FINAL REPORT

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POWERSVILLE LANDFILL SITE
POWERSVILLE, PEACH COUNTY, GEORGIA

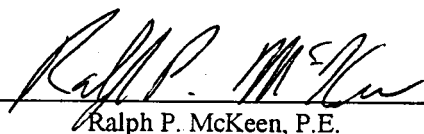
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Prepared by:

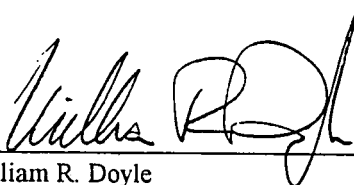

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SECTION 1

BACKGROUND

1.1 INTRODUCTION

The Powersville Landfill (Powersville) Site was added to the National Priorities List in September 1984 following a site investigation by the U.S. Environmental Protection Agency (EPA) and NUS Corporation. Following a Remedial Investigation/Feasibility Study, a Record of Decision (ROD) was signed by the EPA Regional Administrator on September 30, 1987. In September 1988, EPA entered into a Consent Decree with the potentially responsible parties (PRPs) to implement the remedial actions. These actions commenced in January 1991 and concluded in May 1993. A description of the remedial actions is presented in Section 1.4 of this report.

Consistent with CERCLA as amended by SARA, Section 121(c), Section 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan, a statutory Five-Year Review to evaluate the effectiveness of the remedial actions was required for this site. EPA Region IV has decided that a Level I analysis was appropriate for the Powersville Site.

This report presents the information collected during the review by WESTON for the U.S. EPA Region IV under the Alternate Remedial Contract Strategy (ARCS) contract. The review was intended to confirm that the remedial actions and associated performance standards in the ROD have been achieved and that the current conditions remain protective of human health and environment.

1.2 SITE LOCATION AND DESCRIPTION

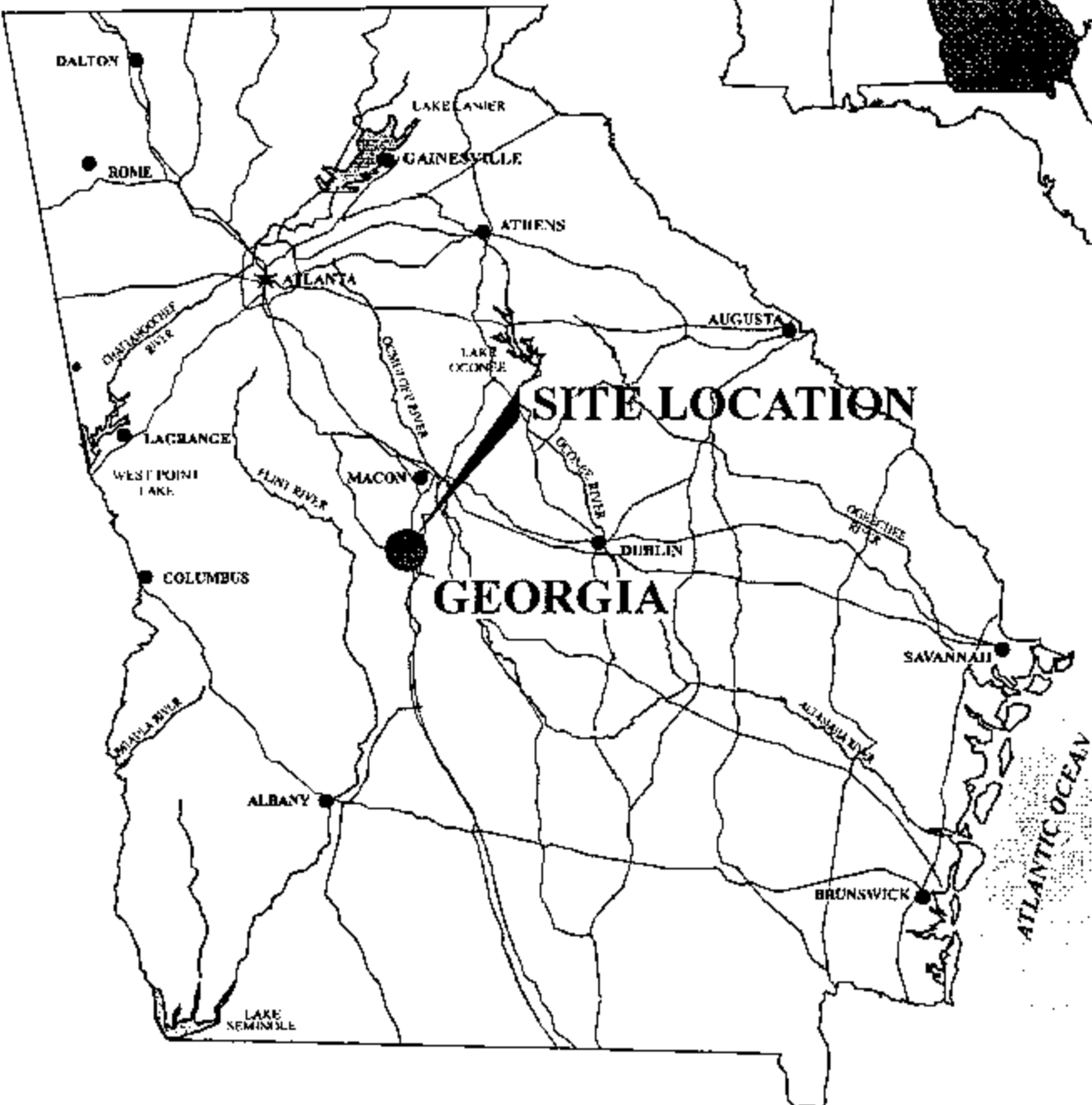
The Powersville Site is located in Powersville, Georgia, in Peach County (Figure 1-1). The site was used originally as a borrow source for sand and fill material. Excavation of borrow soils ceased in 1969, at which time Peach County began operating the site as a sanitary landfill. Municipal solid waste and industrial wastes, including pesticides and associated wastes, were accepted at this landfill.

1.3 SITE HISTORY

The Powersville Site originated as a borrow area which provided sand and fill material to Peach County for local use from the early 1940s to 1969. During 1969, Peach County began operating the site as a sanitary landfill receiving municipal and industrial wastes. In December 1972, the Georgia Department of Natural Resources Environmental Protection Division (EPD), following an inspection of the landfill, suggested to Peach County that a separate area be set aside and maintained to receive and contain pesticides and associated wastes. This area was established and in operation by June 1973.

In March 1977, EPD officials asked the Peach County Board of Commissioners to close the landfill due to the potential for drinking water contamination. This potential was presented because the sand and gravel floor of the landfill could permit contaminated water to enter soil and groundwater. In early 1979, the County ceased accepting all wastes.

EPD began investigation of the site in April, 1983. The site was proposed for inclusion on the National Priorities List in September 1983. The initial hydrogeologic investigation was performed by NUS Corporation, EPA contractor, from October, 1983, through August, 1984. The site was finalized for placement on the NPL in September, 1984.



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The EPA enlisted Camp, Dresser & McKee, Inc., (CDM) to conduct the Remedial Investigation (RI) and a Feasibility Study (FS) from December 1984 to June 1987. The results of the RI/FS indicated a presence of benzene hexachloride, lead, and chromium in the groundwater. In addition, concentrations of vinyl chloride were detected in three groundwater samples, while concentrations of benzene hexachloride, dieldrin, chlordane, and toxaphene were detected in the soil samples taken at the site. The off-site surface samples were found to have no detectable contaminant concentrations.

Based on the RI/FS results, EPA issued the ROD on September 30, 1987, which was subsequently acknowledged by the State of Georgia. In September, 1988, EPA entered into a Consent Decree with Peach County and Canadyne-Georgia Corporation (CGC) (the PRPs) to implement the selected remedial action. CGC agreed to conduct the necessary design studies, develop design specifications and drawings, construct the selected remedy, develop the Operation and Maintenance (O&M) Plan and serve as O&M Coordinator. Peach County agreed to implement the O&M Plan over the 30-year period following completion of construction. CGC retained Clean Sites Environmental Services, Inc. (CSES), to manage the remedial design and remedial action activities.

The Remedial Action (RA) was formally initiated in January 1991, with the acceptance of the Remedial Design. EPA and the State of Georgia conducted a final inspection on May 24, 1993, and determined that the project had been constructed in accordance with remedial design (RD) plans and specifications.

Minor changes to the requirements of the Record of Decision were documented in a Memorandum to the File dated September 3, 1993. One of the seven adjoining property owners refused to sign the deed restriction which was to be placed on her property; however, investigation into the current zoning restrictions on the property indicated that building and drilling on the property would be restricted. The Zoning Board was requested to notify EPA should changes to these restrictions occur. This

notification request was also integrated into the O&M Plan. This minor change is considered to be protective of human health and the environment.

Upon completion of the Remedial Action, Operation and Maintenance (O&M) activities were begun. There have been nine groundwater sampling events conducted to date and one annual O&M report generated. The most recent groundwater sampling event was conducted by the Georgia EPD during the last week of February 1997.

1.4 DESCRIPTION OF THE REMEDIAL ACTIONS

The selected remedial action for the Powersville site included the following activities:

- Surface cover systems for the hazardous waste and municipal landfill areas;
- Installation of a minimum of eight additional groundwater monitoring wells;
- Provision for an alternative water supply for selected residents near the site;
- Imposition of on-site and off-site deed restrictions to prohibit specific actions; and
- Development and implementation of an operation and maintenance (O&M) plan for the remedy.

Remedial activities at the Powersville site were conducted in two events: Remedial Event #1 addressed the landfill and the monitoring wells; and Remedial Event #2 addressed the water line, deed restrictions, and O&M plan development and implementation. All activities were implemented as planned, and no additional areas of contamination were identified. Completion of Remedial Event #2 was documented in the Remedial Action Report for the Landfill Cover while Remedial Event #1 completion was documented in the Remedial Action Report for the Alternative Water Supply Report.

1.5 ARARS REVIEW

Section 121 (d) (2) (A) of CERCLA incorporates into the law the CERCLA Compliance Policy, which specifies that Superfund remedial actions must meet any federal standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements (ARARs). Also included is the provision that State ARARs must be met if they are more stringent than Federal requirements.

The ARARs identified and considered in the Feasibility Study and ROD for the remedial action included:

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Superfund Amendment and Reauthorization Act (SARA)
- Resources Conservation and Recovery Act (RCRA)
- Clean Air Act
- Safe Drinking Water Act
- Clean Water Act
- EPA Groundwater Protection Strategy

WESTON reviewed these ARARs with respect to change in the standards as well as any new standards promulgated since the remedial action.

EPA revised the groundwater criteria for measuring whether the remedial objectives have been met in the Site Closeout Report dated June 30, 1993. These revisions modified the ROD standard for the contaminants of concern in accordance with the EPA Maximum Contaminant Levels (MCL). These revised criteria are shown in column two of the following table.

WESTON reviewed the current federal MCLS provided by the U.S. EPA Office of Water in the *Drinking Water Regulations and Health Advisories, November 1994*. These current MCLs for the contaminants of concern are shown in column three of the following table.

WESTON also reviewed the Georgia Rules for Safe Drinking Water (Chapter 391-3-5) and obtained the primary drinking water standards for the contaminants of concern. The current Georgia primary maximum contaminant levels (MCLs) are the same as the EPA federal standards.

<u>Contaminant</u>	<u>ROD Standard</u>	<u>Revised Criteria</u>	<u>Current Federal MCL</u>
Lindane (gamma BHC)	4.0 µg/L	4.0 µg/L	0.2 µg/L
Vinyl chloride	1.0 µg/L	2.0 µg/L	2.0 µg/L
1,2-Dichloroethane	5.0 µg/L	5.0 µg/L	5.0 µg/L
Lead	50 µg/L	15 µg/L*	15 µg/L*
Chromium	50 µg/L	100 µg/L	100 µg/L

* Lead action level.

The only change to the current standards is the EPA lindane MCL of 0.2 µg/L versus the ROD level of 4.0 µg/L. A review of the quarterly sampling reports revealed that the current laboratory detection limit for lindane is 4.0 µg/L. This detection limit should be revised to the lower concentration of 0.2 µg/L to ensure detection at the current MCL.

WESTON also reviewed the Georgia Rules for Solid Waste Management, Chapter 391-3-4, specifically, Chapter 391-3-4-.07(h) which discusses explosive gas control. While this site has been designed with a passive gas venting system to control the buildup of gas under the synthetic liner, there is no gas monitoring system at the facility property boundary. As discussed in Georgia

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EPD Guidance Document SWM-19, the possible escape routes of landfill gas include venting through the cover or movement through the side of the landfill and out into the surrounding soil formations. The requirements under this rule are that the concentrations of methane gas should not exceed 5 percent methane by volume at the property boundary and not exceed 1.25 percent methane by volume in facility structures.

The monitoring of the gas vents currently performed does not indicate if any gas migration is occurring laterally in the subsurface soil. The fact that occupied residences and the Lizzie Chapel Church are adjacent to the landfill makes this an issue to be evaluated if it has not been done already. WESTON, during the review of post remediation O&M documents, did not encounter a discussion relating to potential off-site migration of landfill gas.

SECTION 2

SITE CONDITIONS

2.1 SUMMARY OF SITE INSPECTION

WESTON representative Ralph P. McKeen performed a site inspection on February 26 1997. Also on site during this visit were Mr. Eddie Williams (Georgia EPD) and a sampling team from PRC Environmental Management, Inc. The inspection consisted of a walk-through of the entire site, locating existing wells and other facility features. The purpose of this visit was to observe the current site conditions and evaluate the effectiveness of the remedial actions performed to date. WESTON utilized the Operations and Maintenance Manual dated August 19, 1993, as a guide to document each component of the landfill structures. Specifically, Chapter 18 and Appendix H (Inspection Report Forms) were used to document site conditions. Mr. Williams was on site to coordinate the groundwater sampling activities being conducted by PRC Environmental as a contractor to the Georgia EPD.

The following is a summary of WESTON's observations made during the site tour with references to photographs which are included as Appendix B of this report. The site is in a rural area with a solid waste transfer station situated adjacent to the site (Photograph No. 1). The transfer station is operated from Tuesday through Saturday of each week. Although the transfer station attendant has no formal obligation to monitor the landfill site, his presence is obvious to any potential trespasser.

Looking over the entire site from the entrance gate (Photograph No. 2), the cover system appears to be well maintained. Walking along the perimeter just inside the fence line, some unvegetated

areas with minor erosion was observed (Photograph No. 3). This can only be corrected by reseeding the bare areas to establish a continuous vegetative cover.

WESTON's McKeen continued the site reconnaissance and observed the monitoring features of the landfill. Photograph No. 4 shows one of the settlement monitoring stations protected by guard posts. All of the stations were in good shape with the brass disk for surveying still in place.

The next two monitoring features observed were the cover drainage pipe cleanout (Photograph No. 5) and the passive gas vents (Photograph No. 7). Again, all of these structures appeared to be in good condition with adequate guard posts for protection.

The concrete stormwater drainage channels (Photographs No. 8 and No. 9) are clean and of good structural integrity. These channels provide stormwater conveyance to the detention ponds at the south end of the site. Also noted was the perimeter fence which is constructed of chain link with three strands of barbed wire on top (Photograph No. 9). This fence is in good shape and has warning signs posted approximately every 100 feet.

Both stormwater detention ponds appear to be in good condition. Since the site is well vegetated, minimal sediments should accumulate. The ponds will, however, provide for attenuation of peak flows during storm events so that the receiving ditches along Highway 46 are not flooded.

Riprap downdrains (Photograph No. 12) which carry stormwater down the steeper slopes appear to be in good condition. There are weeds and some vegetation growing within the riprap but does not appear to be adversely impacting the erosion control features of the riprap.

The last feature of the landfill observed during the site reconnaissance was the subsurface drainage pipe outlets (Photograph No. 13). According to the O&M Plan and, as shown on Figure

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2-1, three of these are supposed to exist along the south and east sides of the landfill. Only one of these was found by WESTON. The other two are apparently covered or have settled into the cover soil. The function of these outlets are to provide a positive outlet from the cover drainage layer. WESTON observed a swampy area shown on Figure 2-1, which is in a relatively flat portion of the landfill. This could be a result of settlement and/or plugging of the remaining two pipe outlets in the vicinity. The negative effects of this swampy or ponded area is documented in Section 4.2.1 (Page 4-14) of the Operations and Maintenance Plan, August 19, 1993, as follows:

- Ponded water acts as a reservoir which leaks through any hole below the ponded area by providing a higher hydraulic head above the hole.
- The area becomes swampy for long periods, not supportive of cover vegetation, and susceptible to drainage when driven over or walked upon.

2.2 SUMMARY OF INTERVIEWS

The Five-Year Review process requires that key individuals involved with the site be contacted for interviews. The interview process is intended to ascertain any new applicable information regarding the selected remedy, site history, and other site-specific issues. During the site inspection, WESTON solicited input from local residents and interviewed with Mr. Eddie Williams. All other interviews were conducted by telephone.

At the conclusion of the site inspection, WESTON's McKeen solicited input from individual residents near by the site. The one resident at home living on the southeast side of the site just across Highway 49 had just moved in recently and knew nothing about the site.

McKeen interviewed Ms. Mary Payne, who lives at Route 5, Box 190 in Byron, Georgia. Ms. Payne lives adjacent to the northwest corner of the Powersville Landfill property. Ms. Payne

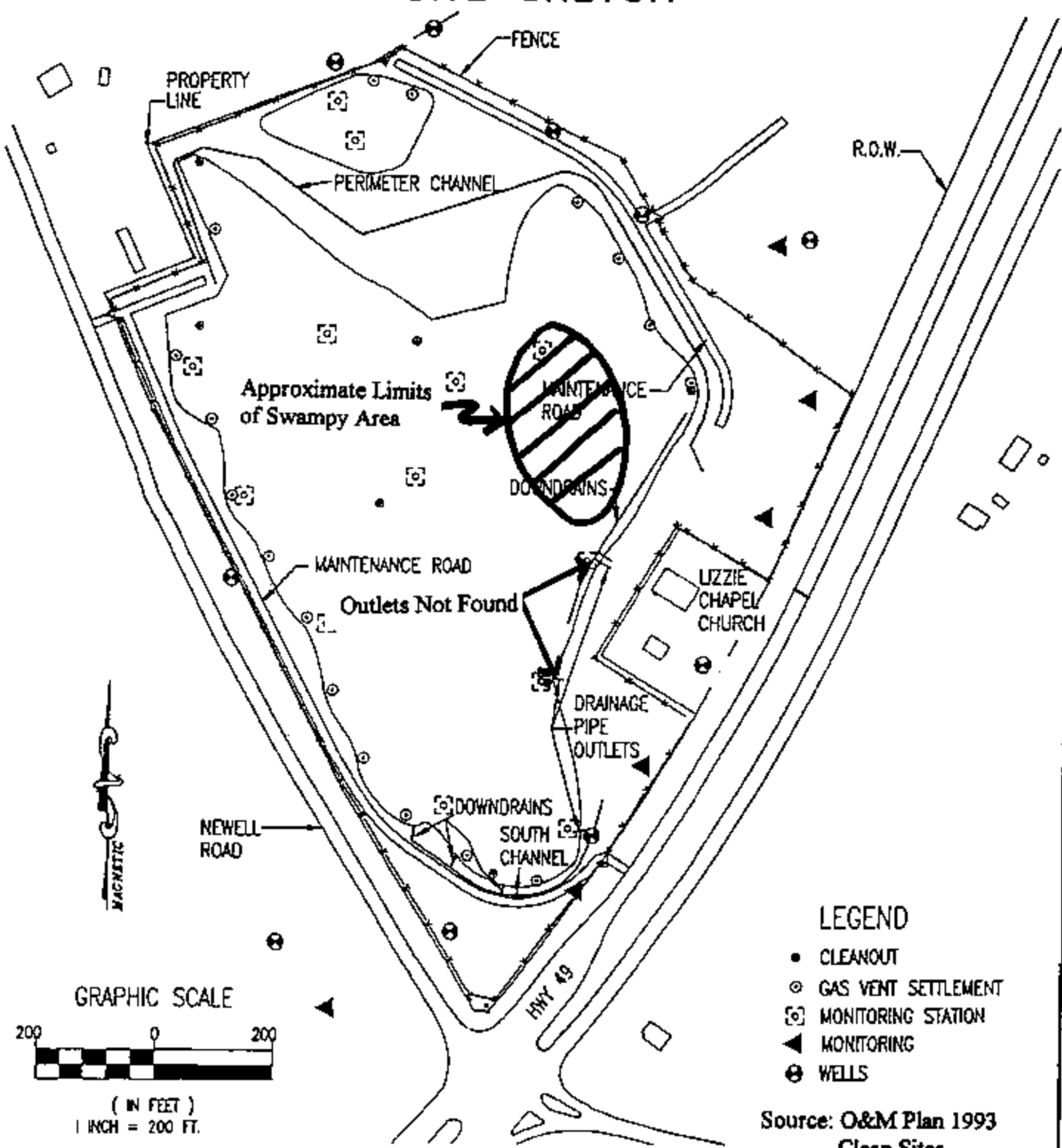
POWERSVILLE LANDFILL

NPL SITE PEACH COUNTY, GEORGIA

INSPECTION OF SITE STRUCTURES

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SITE SKETCH



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initially stated that she is not real happy with the increased taxes as a result of the public water supply which was installed to neighbors around the site. In addition, she is concerned that the public water supply is no better than her own well water since the POTW is next to the Woolfolk Superfund Site. Overall, Ms. Payne felt that the landfill cap looks good but went on to discuss issues related to groundwater. Ms. Payne stated that she still has concerns that the remedy is not fully protective in that lateral groundwater movement through the waste can potentially migrate off site carrying contaminants. Her biggest disappointment about the site related to the impact on her parents (now deceased) who had to limit the use of their own well water and could no longer have a vegetable garden.

WESTON interviewed with Mr. Eddie Williams of the Georgia EPD while he was on site to coordinate the groundwater sampling effort. Mr. Williams has been involved with the site since the beginning of groundwater monitoring. He was not involved with the cap construction activities. Mr. Williams remarked that the Georgia EPD was not completely in favor of the capping remedy, particularly on the hazardous waste portion. They felt that some removal of the source materials would have been more appropriate since groundwater movement laterally still has the potential to migrate through the waste and carry contaminants off site.

Mr. Williams has compiled all the groundwater data (Appendix A) and provided a background summary as follows: an upgradient well (MW-26) north of the property continues to have elevated chromium levels; a downgradient well (MW-24) just east of the transfer station has elevated levels of 1, 2-dichloroethane, and a downgradient well (MW-25) west of Newell Road on private property has elevated levels of chromium. He said, in general, these are the only wells with levels above MCLs. He also stated that the potentiometric surface of the groundwater continues to show a southerly flow direction which complicates the elevated chromium readings from the well north of the site.

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Mr. Williams provided a synopsis of the PRPs and their roles. The Georgia DNR is responsible for groundwater monitoring only. Peach County provides the general maintenance (i.e., mowing, fence repair). Canadyne (CGC) has hired CSES as the overall administrator of the operations and maintenance. As the administrator, Clean Sites is then responsible for compiling the operations and maintenance inspection reports and groundwater data into an operations and maintenance report which is submitted to the U.S. EPA annually.

Mr. Williams has no additional information regarding the public water supply other than to say that all nearby residents offered the supply accepted but one and did not know the identity.

Ms. Ellen Fitzpatrick of CSES was contacted via telephone. Ms. Fitzpatrick was involved with the site during the remedial design and the remedial action. She explained that CSES' current role in the O&M activities is that of administrator for Canadyne George Corporation (CGC). As the administrator, they coordinate, compile, and submit the O&M reports to EPA. All O&M activities are conducted by either the State of Georgia (groundwater monitoring) or Peach County (all ordinary O&M activities). Ms. Fitzpatrick stated that only one "Annual Operations and Maintenance Report" had been submitted to date. Subsequently, a copy was forwarded to WESTON for review.

Ms. Fitzpatrick provided additional contact names with other firms involved with the project. Her comment when asked about the project was, "The project went very well; there were only some minor disputes with the construction contractor but that overall a quality job was produced."

WESTON contacted Mr. Albert F. Vickers (former Director of Environmental Affairs for CGC). He was very much involved with the project during the investigation and remedial action at the site. Mr. Vickers provided input from the PRP's perspective. He started the interview by stating

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that “the site should not have been a Superfund site in the first place.” He felt that the reactions to the groundwater contamination and subsequent remedial actions were all politically motivated. He felt that the entire area is heavily agricultural and that since this was an open dump, the origin of the pesticides and herbicides could have been anyone in the area.

Mr. Vickers contended that the contamination found in the Lizzie Chapel Church well is probably not uncommon for any well in this agricultural area. He felt that the landfill should have been filled up and then closed to make it easier to place the cover system and also to avoid diverting the waste to another site and creating another problem. Mr. Vickers ended the interview by saying that overall the cap did serve to reduce infiltration of water through the waste.

Mr. Ted Knutzen was contacted to discuss the design aspects of the project. Mr. Knutzen is employed by Applied Science & Engineering (ASE) which was subcontracted by CSES for engineering design services. Mr. Knutzen performed much of the work and was familiar with the site, remembering that one of their biggest concerns was potential settlement. ASE proceeded with their design of a system that could accommodate minor degrees of settlement without affecting the overall performance of the cover system. In addition, the settlement monitoring stations were included to evaluate future settlement.

WESTON asked Mr. Knutzen about the lack of gas monitoring probes at the property boundaries. He said that they had no indication that gas would be generated due to the age of waste. At the time of the design, it had been over 10 years since garbage was accepted at the landfill. Mr. Knutzen recalled that it was late in the design stage when the gas vents were included as a contingency to prevent gas from building up under the impermeable synthetic cover.

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ASE visited the site during construction only when design issues needed resolution. Mr. Knutzen said that CSES maintained a full-time Construction Manager. He felt that the Construction Manager was very capable and was confident that the cap was constructed properly.

WESTON contacted Mr. Jerry Bryan with the Peach County Public Works Department. Mr. Bryan had been tasked to perform the site inspections and routine maintenance. Mr. Bryan explained that the County Administrator coordinates the surveying services for inspection of the settlement monitoring stations as well as engineering services for the gas monitoring. The most recent inspection was performed by the County Public Works Director who, according to Mr. Bryan, will continue the inspections.

Mr. Bryan recalled the swampy area during one of his inspections which is the same area identified by WESTON during the site reconnaissance visit as part of the five-year review. He was not aware of the drainage cover outlets that may be covered or settled causing this saturated condition. Mr. Bryan stated that his involvement currently will be to respond to requests by the Public Works Director when maintenance and mowing is required.

2.3 AREAS OF NON-COMPLIANCE

O&M inspection reporting procedures are not being performed in accordance with the schedule outlined in the O&M Plan. To date, only one (1) annual O&M report has been issued to the EPA.

Some bare spots on the cover are present which, if left unattended, will allow erosion of the soil cover.

A swampy condition on the relatively flat portion of the cover exists on the east side. This could be caused by non-functioning drainage layer pipe outlets.

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SECTION 3

RECOMMENDATIONS

3.1 TECHNOLOGY RECOMMENDATIONS

The small bare soil areas require reseeding to establish permanent vegetation for erosion protection on the cover system. Consultation with the local National Resource Conservation Service of the U.S. Department of Agriculture is recommended to obtain the proper application rates and fertilization requirements best suited for the local conditions.

The drainage layer pipe outlets should be investigated to determine the location and potential link to the swampy area as shown on Figure 2-1. If the outlets are plugged due to settlement, repairs should be performed in accordance with Section 15.6.3 of the Operation and Maintenance Manual, August 19, 1993, prepared by CSES.

As discussed in Section 1.5 of this report, it appears that no landfill gas monitoring at the property boundary is being performed. During the next gas monitoring of the vents, it is recommended that the facility structures (transfer station building) and the Lizzie Chapel Church be monitored. In addition, consideration should be given to monitoring for landfill gas in the subsurface soil at the property boundary. Typical evaluation techniques include placing a temporary small diameter hole with a bar-hole punch in the ground and monitoring with a landfill gas detector equipped with a pump to draw air from the surrounding soil into the bar-hole.

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Based on the change in the federal MCL for lindane as presented in Section 1.5, the detection limit for groundwater lindane analysis should be lowered to 0.2 µg/L. This will enable detection of lindane levels down to the MCL.

3.2 ADMINISTRATIVE RECOMMENDATIONS

Based on the five-year review activities, it is apparent that the routine inspection activities required in the EPA-approved O&M Plans are performed by different individuals. These activities are necessary to fully evaluate the performance of the cap. Peach County is responsible for this activity and should assign a specific individual to these tasks to ensure timely and consistent field inspections.

3.3 REQUIREMENTS FOR RECOMMENDATION IMPLEMENTATION

The Field Inspections Forms included in the O&M Plan are very specific and include all the elements needed for evaluation of the landfill cover system. It is recommended that the assigned inspector be educated on the elements and features included in the cover system by an individual familiar with the design. This will not only help the inspector but also provide more reliable information for evaluation of the cover system.

Field procedures for O&M activities are required in accordance with the O&M Plan. After the field procedures are completed, the inspection reports should be submitted for evaluation by an engineer experienced in civil and geosynthetic engineering systems.

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3.4 STATEMENT ON PROTECTIVENESS

The alternate water supply for the surrounding residents remains in place which protect local residents from using their own private water wells in the saturated zone found to contain contaminants. In addition, groundwater monitoring has resumed on a quarterly basis to evaluate and monitor contamination migrating off site. Deed restrictions to prevent any drilling or construction activities in the area must remain in place.

The capping portion of the remedy continues to eliminate the surface water and air routes of exposure to any of the buried hazardous waste constituents. The cover system is well maintained with the exception of some minor erosion. Overall, the site continues to provide protection from contaminants as originally intended.

3.5 NEXT REVIEW

During the next review, WESTON suggests a similar format and level of effort. Groundwater sampling should also be performed whether it is being performed as an O&M activity or part of the Five-Year Review process.

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APPENDIX A

GROUNDWATER ANALYTICAL SUMMARY

POWERSVILLE, GEORGIA
LANDFILL NPL SITE

SUMMARY OF MONITORING
WELL SAMPLING ANALYSES

7/29/94 THRU 3/7/96

Well # 2 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-0-	<4	11	29	-----	-0-
7/29/94	<2	<4	<1	65.6	<3	<2
9/21/94	<2	<4	1.7	88.2	<3	<2
12/13/94	<2	<4	<1	11	<3	<2
3/14/95	<2	<4	<1	35.9	<3	<2
6/20/95	<2	<4	2.2	21.1	<3	<2
9/13/95	<2	<4	0.7E	9.8	<3	<2
12/14/95	<2	<4	1.2	21.6	<3	<2
3/7/96	<2	<4	0.9E	12.4	<3	<2

3/14/95 - Carbon Disulfide detected at 3 ppbE

Well # 7 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-0-	<4	22	915	-----	-0-
7/29/94	<2	<4	1.5	48.7	<3	<2
9/21/94	<2	<4	<1	35.6	<3	<2
12/13/94	<2	0.022E	<1	119	<3	<2
3/14/95	<2	<4	<1	34.6	<3	<2
6/20/95	<2	<4	2.0	135	<3	<2
9/13/95	<2	<4	3.7	224	<3	<2
12/14/95	<2	<4	4.6	245	<3	<2
3/7/96	<2	<4	1.2	41.9	<3	<2

12/13/94 - Carbon Disulfide detected at 6 ppb, Methylene Chloride detected at 15 ppb

3/14/95 - Carbon Disulfide detected at 6 ppb, Methylene Chloride detected at 22 ppb

Well # 20 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	<2	0.22E	35.4	3.4	<3	<2
9/21/94	4	0.44E	42.5	2.9	<3	<2
12/13/94	4	0.33E	5.6	<2	<3	<2
3/14/95	3	0.60E	<1	1.2	<3	<2
6/20/95	<2	0.26E	35	5.3	<3	<2
9/13/95	8	0.413E	7.3	3.8	<3	<2
12/14/95	11	0.65E	21.3	1.8	<3	<2
3/7/96	10	0.73E	15.2	2.7	<3	<2

3/14/95 - Methylene Chloride detected at 24 ppb, delta BHC detected at 0.71 E ppb, beta, BHC detected at 0.10E ppb, alpha BHC detected at 0.45E ppb

Well # 21 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	2	0.097E	27.7	<2	<3	<2
9/21/94	<2	0.120E	1.2	<2	<3	<2
12/13/94	2	0.092E	1.7	<2	<3	<2
3/14/95	<2	0.110E	26.4	<2	<3	<2
6/20/95	<2	0.082E	7	0.7E	<3	<2
9/13/95	<2	0.102E	3.9	1.5E	<3	<2
12/14/95	<2	0.170E	16.7	2.8	<3	<2
3/7/96	2	0.170E	42.3	1.5E	<3	<2

12/13/94 - Carbon Disulfide detected at 8 ppb, Methylene Chloride detected at 13 ppb.

3/14/95 - Carbon Disulfide detected at 63 ppb, Methylene Chloride detected at 23 ppb, delta BHC detected at 0.30E ppb, beta BHC detected at 0.29E ppb, alpha BHC detected at 0.16E ppb.

Well # 22 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	<2	0.011E	53.2	<2	<3	<2
9/21/94	<2	0.041E	21.1	<2	<3	<2
12/13/94	<2	0.030E	<1	<2	<3	<2
3/14/95	<2	0.030E	14.3	<2	<3	<2
6/20/95	<2	0.029E	31.8	1.4	<3	<2
9/13/95	<2	0.110E	4.8	1.5	<3	<2
12/14/95	<2	0.220E	30.2	<2	<3	<2
3/7/96	<2	0.180E	4.7	<2	<3	<2

12/13/94 - Carbons Disulfide detected at 8 ppb, Methylene Chloride detected at 14 ppb

3/14/95 - Carbon Disulfide detected at 220 ppb, Methylene Chloride detected at 21 ppb, alpha BHC detected at 0.037E ppb

Well # 23 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	<2	<4	38.6	9.9	<3	<2
9/21/94	<2	<4	45.6	4.8	<3	<2
12/13/94	<2	<4	16.8	3.0	<3	<2
3/14/95	<2	0.94E	11.1	1.6E	<3	<2
6/20/95	<2	0.17E	42.6	1.6E	<3	<2
9/13/95	<2	0.154E	8.2	1.5E	<3	<2
12/14/95	<2	0.20E	13.0	1.5E	<3	<2
3/7/96	<2	0.21E	42.9	<2	<3	<2

12/13/94 - Carbons Disulfide detected at 95 ppb, Methylene Chloride detected at 12 ppb, delta BHC detected at 0.17E ppb, alpha BHC detected at 0.08E ppb

3/14/95 - Carbon Disulfide detected at 140 ppb, Methylene Chloride detected at 4 ppb, Chlorobenzene detected at 2 ppb, delta BHC detected at 0.44E ppb, beta BHC detected at 0.30E ppb, alpha BHC detected at 0.13E ppb

Well # 24 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	7	<4	12.8	<2	<3	<2
9/21/94	11	0.015E	131.0	2.6	<3	<2
12/13/94	13	<4	15.8	<2	<3	2
3/14/95	8	0.039E	32.9	1.5E	<3	<2
6/20/95	6	0.044E	33.7	6.1	<3	<2
9/13/95	3	0.031E	21.3	3.7	<3	<2
12/14/95	4	<4	13.0	1.8E	<3	<2
3/7/96	<2	<4	9.0	<2	<3	<2

Well # 25 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	<2	<4	15	<2	<3	<2
9/21/94	<2	<4	27.3	<2	<3	<2
12/13/94	<2	<4	51.2	<2	<3	<2
3/14/95	<2	<4	2.0	0.99E	<3	<2
6/20/95	<2	<4	139.0	1.5E	<3	<2
9/13/95	<2	<4	5.9	1.5E	<3	<2
12/14/95	<2	<4	39.1	<2	<3	<2
3/7/96	<2	<4	118.0	<2	<3	1

12/13/94 - Carbon Disulfide detected at 6 ppb, Methylene Chloride detected at 5 ppb, Tetrachloroethene detected at 2 ppb, Arochlor 1254 detected at 24 ppb, Arochlor 1016 detected at 63 ppb, Arochlor 1260 detected at 8.7 ppb, Chlorobenzene detected at 5 ppb

3/14/95 - Carbon Disulfide detected at 5 ppb, Methylene Chloride detected at 21 ppb, Chlordane detected at 0.025 ppb, Chlorobenzene detected at 8 ppb.

Well # 26 (all units in ppb)

	1,2-Dichloroethane	Lindane (gamma BHC)	Chromium	Lead	Toxaphene	Vinyl Chloride
6/30/89	-----	-----	-----	-----	-----	-----
7/29/94	<2	<4	237.0	3.8	<3	<2
9/21/94	<2	<4	148.0	4.6	<3	<2
12/13/94	<2	<4	<1	<2	<3	<2
3/14/95	<2	<4	122.0	14.5	<3	<2
6/20/95	<2	<4	40.0	4.1	<3	<2
9/13/95	<2	<4	384.0	8.3	<3	<2
12/14/95	<2	<4	109.0	3.0	<3	<2
3/7/96	<2	<4	301.0	12.7	<3	<2

12/13/94 - Methylene Chloride detected at 15 ppb

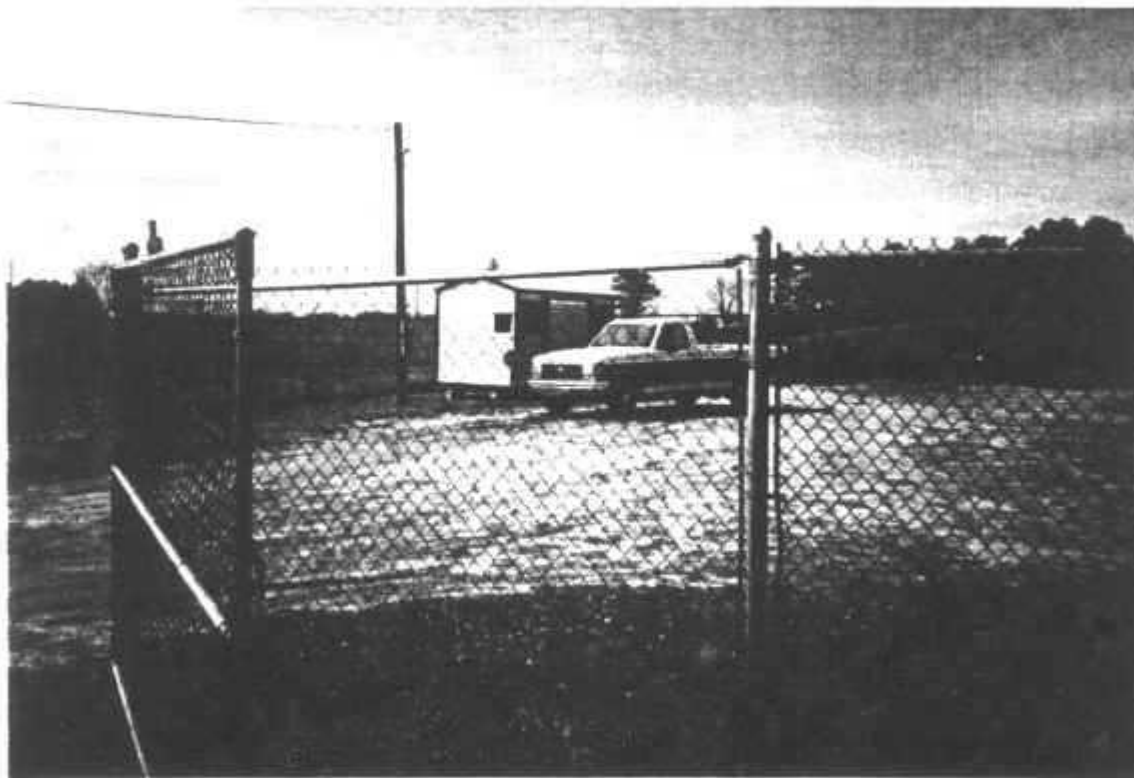
3/14/95 - Carbon Disulfide detected at 2 ppb, Methylene Chloride detected at 2 ppb, Acetone detected at 57.0 ppb.

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Five-Year Review Final Report
Powersville Landfill
Section: Appendix C
Revision: 1
Date: December 1997

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION



Photograph No. 1

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Solid waste transfer station located adjacent to the Powersville Site which is operated by Peach County from Tuesday through Saturday each week.



Photograph No. 2

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: View of the Site as standing at the entrance gate looking northwest.



Photograph No. 3

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Lack of vegetation and signs of minor erosion observed along the east side of the landfill.

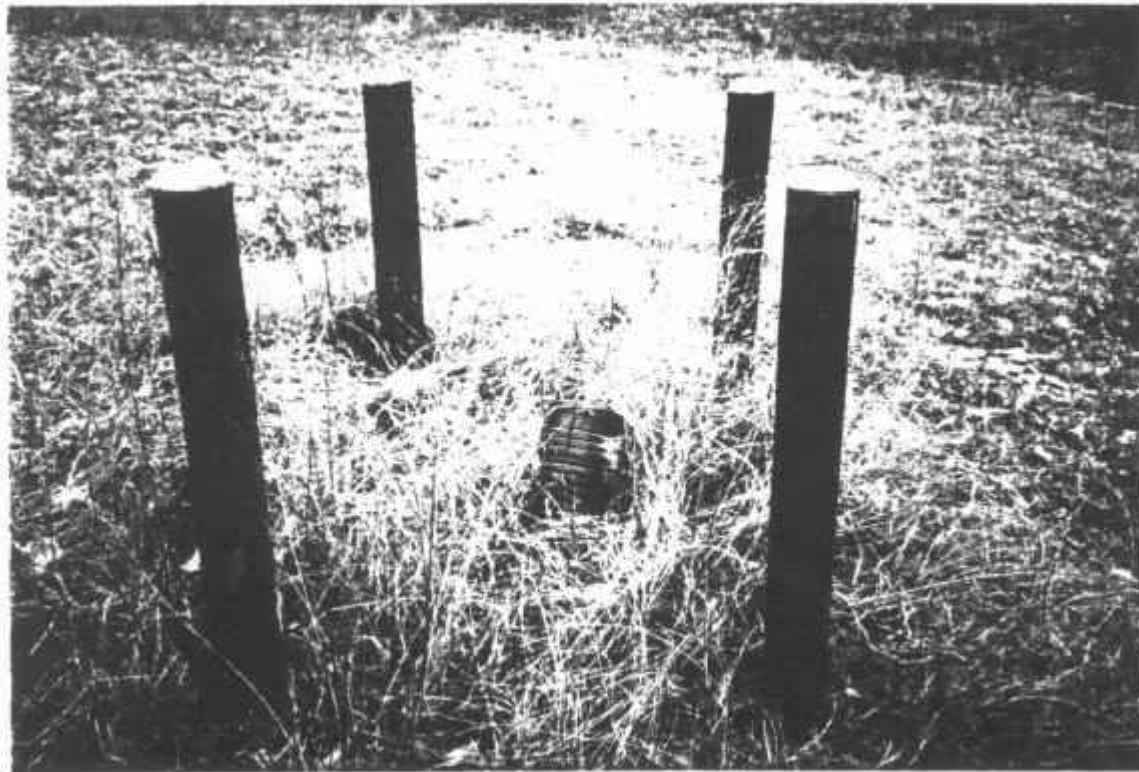


Photograph No. 4

Date: February 26, 1997

Location: Powersville, Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: A settlement station post (white) which is protected by 4 steel guard posts.



Photograph No. 5

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Cover drainage pipe cleanout made of corrugated HDPE pipe and protected by 4 steel guard posts.

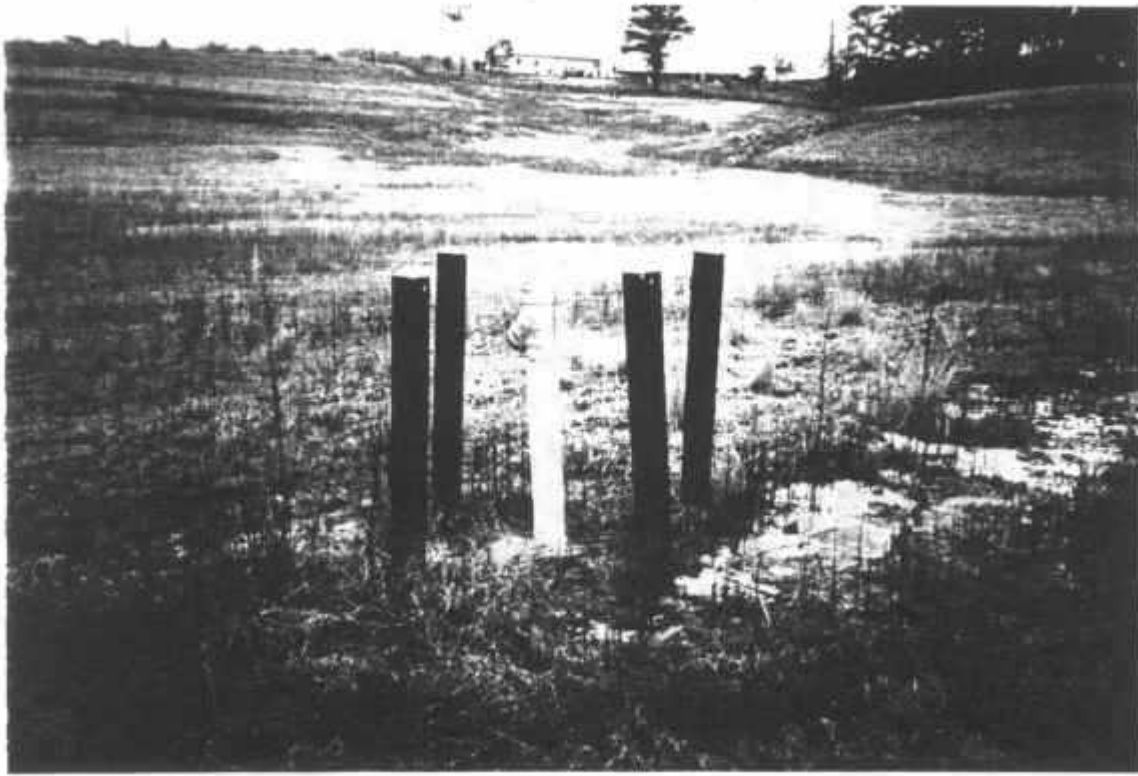


Photograph No. 6

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: View of the Site looking south towards Route 46. Lizzie Chapel Church in background.



Photograph No. 7

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Gas vent (white with yellow cap) near the center of the landfill. Vent has nylon screen over opening and is protected by 4 steel guard posts.



Photograph No. 8

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: View of concrete surface water drainage channel leading to one of the two stormwater detention ponds.



Photograph No. 9

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Concrete drainage channel along east side of the site. Chain link fence with 3 strands of barbed wire completely surrounds the site.



Photograph No. 10

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: The southeast stormwater detention pond. The spillway outlet from the pond drains to the ditch along Highway 49.



Photograph No. 11

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: View of the southwest stormwater detention pond with Highway 46 in background.



Photograph No. 12

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: Riprap lined surface water down drain at the end of the diversion terraces.



Photograph No. 13

Date: February 26, 1997

Location: Powersville Landfill, Powersville, Peach County, Georgia (Five-Year Review)

Description: One of the cover drainage pipe outlets which discharges to a channel leading to the southwest detention pond. The other two outlets were not located.